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C A S E

OF

REMOVAL OF STONE FROM THE BLADDER

BY THE NEW OPERATION OF LITHECTASY OR CYSTECTASY,
WITH REMARKS.

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THE following case possesses some interest, from the circumstance of its being, so far as I am aware, the first on record of the adoption of the plan so ably advocated by Dr Willis of London in a recent publication,* and said to have been originally proposed by Mr John Douglas, and shortly afterwards (in 1819) suggested to the late Sir Astley Cooper by the Drs Arnott.

The successful removal of a calculus of considerable size on that occasion by Sir Astley, in the mode recommended by the Drs Arnott, who attended the case with him, could scarcely be regarded as a fair test of the merits of this operation, inasmuch as the patient had, nine months previously, undergone the operation of lithotomy, and a possibility existed of the cicatrix of the prostate having been torn open, if, indeed, that gland had ever entirely healed,—a fact more than doubtful, from the presence of a recto-urethral fistula, that had remained from the first operation, and might possibly traverse a portion of the gland.

* On the Treatment of Stone in the Bladder by Medical and Mechanical means. By R. Willis, M. D., of the Royal College of Physicians, Physician to the Royal Infirmary for Children, &c.

The operation, as performed by myself, deviated in some respects from the plan proposed by Dr Willis, as it appeared to me that any advantage that could be gained by external incisions so very limited as he recommends, would be much more than counterbalanced by the inconvenience that might possibly attend the introduction of the dilator, by the difficulty of securing any blood-vessel in case it were necessary, and by the additional resistance that would be offered to the process of dilatation, and to the subsequent removal of the calculus.

CASE. Thomas Irving, aged 17, stone mason, first consulted me in the month of May 1842. His general health was good, though the inconvenience that arose from the presence of a stone in his bladder was increasing. He had, however, been able to attend to his employment until a fortnight before I saw him, and stated that he could walk, and even run, without suffering. The symptoms were not severe, but, as the medical treatment to which he had been previously subjected, had failed to remove the irritability of his bladder, he was anxious to submit to an operation for the removal of the stone, with which he believed he had been affected for four months.

Having observed a slight scaly eruption on the skin, and that the urine was of an acid nature, I subjected him to a course of simple alteratives, and gave him a weak solution of the carbonate of potash in considerable quantities. As the stone on sounding appeared to me, and to my medical friends, who on various occasions saw the patient, to be of small size, they at once agreed with me on the fitness of the case for a trial of the operation of lithectomy; and the patient, together with his father, willingly consented to its adoption, on its being explained that it was comparatively, if not entirely, free from danger.

I accordingly procured from Mr Weiss of London a dilator with stop-cock and syringe, as described by Dr Willis, and proceeded on 29th of July, after the exhibition of an enema and an opiate, to operate as follows, in the presence of Drs Jackson, Oliver, James, Atkinson, my brother Dr William Elliot, and pupil Mr Fleming.

Operation.—The grooved staff was introduced, and the stone felt and heard. The patient was then secured in the same position as for lithotomy, and the different steps were precisely the same as in that operation, until the prostate and membranous part of the urethra were exposed. The latter was opened close to the prostate, and divided cautiously towards the bulb, by carrying the knife along the groove of the staff, till an opening was made of sufficient size. The staff was then withdrawn, and the point of the forefinger of the left hand served as a guide for the introduction of the dilator, which, having been previously well greased,

was passed along without any difficulty. A little warm gum-mucilage was next slowly injected into the instrument, until the patient slightly complained of the feeling of distention. On removing him from the table to the bed he complained of a strong inclination to make water, which was found to arise from the dilating part of the instrument having slipped into the bladder. It was emptied, partially withdrawn, and, when fairly within the neck of the bladder, again distended. In this position it was secured by attaching a long tape to it, and around the patient's foot, which again was fastened to the bed post.

The patient did not complain above his breath during the operation, nor lose more than two or three drachms of blood. Another opiate was now administered.

In three hours time, a few teaspoonfuls of the mucilage were again thrown into the dilator until the patient complained. Urine had passed freely along that part of the tube which communicated with the bladder. He slept occasionally during the day, and the pulse was natural.

30th, at 8 $\frac{1}{2}$ A. M. Going on well; thought the distention as much as he could bear.

At 1 P. M. Slight sympathetic tenderness over the whole of the abdomen; pulse 104, irritable; uneasy from the distention; pain of perineum on coughing; tongue clean and moist. Gave him an opiate, and sent word to my medical friends, who met me at 3 P. M. I then, in their presence, emptied the dilator, and withdrew it, at the same time passing my left forefinger along it into the bladder. I immediately felt the stone, which was of small size, and in shape resembled a coffee bean, being about four times its size. It was removed with the scoop and finger. The prostate was well dilated, and would have allowed the removal of a calculus of more than an inch in its shorter diameter. The uneasiness of the abdomen and perineum disappeared on the withdrawal of the dilator. A lithotomy tube was then left in the wound.

At 12, *med. nocte*. Urine had passed freely; pulse 96; tongue moist; no pain; had slept well. Ordered a dose of castor oil.

31st. Bowels not moved; had an enema; appetite good; says "he never felt better."

August 1. A. M. Complained of slight uneasiness, which disappeared on the removal of the lithotomy tube; going on well. At 10 P. M. was able to retain his urine, and could expel it by the wound.

At midnight passed about half-a-cupful by the natural passage. He was directed to lie on his right side, to favour its passage along the urethra as much as possible.

2d to 11th. Going on well ; bowels regular ; tongue clean ; no constitutional disturbance ; urine escaped freely both by the natural passage and wound ; deposit of mucus in it ; no pain ; each night had taken a composing draught.

12th. Had a rigor.

13th. Complained of pain along the left spermatic cord.

15th. Left testicle swollen.

20th. Unable to void his urine by the natural passage at all ; *Ardor urinæ*, and *gonorrhœa præputialis*.

24th. There was a discharge of a teaspoonful, or two at the most, of dark brown fluid, partly by the urethra, and partly by the wound. None of it had been kept. We supposed it to have been from a small abscess in the neighbourhood of the bulb, from the circumstances of the rigor on the 12th, and of no urine having passed along the urethra since the 20th, though it had escaped freely by the wound.

For a few days he had laboured under constitutional disturbance of a slight description, and for the first time since the operation had not rested well at night. After the escape of purulent matter, however, on 24th, he rapidly improved, and was able to walk out before the end of the month, occasionally calling at the surgery, and at other places still more distant from his home. For a short while, a few drops of urine occasionally escaped by the perineum when he was making the last usual efforts to expel it, until the wound finally closed. He has followed his employment (which is now that of a pipe-maker) from the 3d or 4th of October, and has improved much in appearance, being considerably stouter than before the operation ; and he says he would willingly submit to it again if afflicted with the same complaint.

I may mention that the patient was seen at different times by Dr Lonsdale of Edinburgh, and by Messrs Bowman, Kerr, and Linton of this city, besides those present at the operation.

Remarks.—1. It will always be advisable before hand to dilate the urethra and neck of the bladder as much as possible, by the introduction of bougies gradually increased in size, both to facilitate the passage of the dilator, and to accustom those parts to the presence of a foreign and irritating body.

2. Before operating, as well as during the process of distention, an opiate operates advantageously, by diminishing the sensibility, lessening any chance of shock, and relaxing the part.

3. The grooved staff should be large, and pressed against the perineum, not hooked against the pubis, as in lithotomy, care being of course taken to prevent its escape from the bladder.

4. The external incisions I would recommend to be free, since, if the prostate were unfit to undergo the process of dilatation, either from great rigidity, as is frequently found in old subjects,

or from morbid irritability,—the operation could be at once completed by converting it into lithotomy. It will be unnecessary to repeat the reasons before given, for the preference afforded to this plan of proceeding.

5. The form of the dilator sent to me by Mr Weiss might be improved by making it cylindrical, and not tapering towards each end. There would thus be no risk of its slipping from its position. The signs of its being properly placed are the feeling of distention and immobility. When it slips into the bladder, (as happened in this case, on removing the patient from the table,) the instrument can be pushed inwards towards the bladder, cannot be withdrawn, the tube is very moveable in all directions, and the patient experiences *tenesmus vesicæ*, without any feeling of distention. It would be better if the dilating part of the instrument was of sufficient length to appear in sight, as the operator would be not only certain of its position, but able also to judge of the degree of tension when injecting the fluid,—a much safer criterion than trusting to the feelings of the patient, who might possibly submit without complaint to a pressure that would prove injurious. The instrument would be also improved by attaching a small stop-cock to the urine tube, and another to the tube that communicates with the dilator, as that which screws into the syringe is apt to slip when left in the tube. If the piston of the syringe was graduated, and the dilator perfectly water-tight, the surgeon would be able to judge exactly of the degree of distention of the prostate by the quantity of the fluid injected; and this would at once enable him to remove the instrument as soon as the dilatation was complete.

6. The length of time requisite for dilating will, of course, vary according to the resistance of the prostate and degree of force used; but I would strongly urge its being done at intervals, for, say quarter of an hour at a time, as less likely to cause irritation than if continued for a period of 30 or 40 hours, as has been mentioned.

When the dilator was withdrawn in this case, two fingers could be introduced with the greatest ease along with the scoop.

The instrument, when fully distended, measures $4\frac{1}{2}$ inches in circumference, and is about the size of a hen's egg; and a stone of the same dimensions might have been easily extracted.

Though twenty-five hours elapsed before the removal of the stone, it could have been as easily effected, and the dilation must have been as complete, at the end of the third hour, since no additional fluid was thrown in after that time. This period was allowed to elapse, as I certainly did not expect to meet with so little resistance, and be able to complete the operation in so short a time. The alterations in the length of the dilating part of the instrument which I suggested above, would have at once

prevented this, nor would it have happened, could I have been certain that none of the fluid had escaped where the stopcock is inserted into the tube, and by that means known that the distention was kept up.

Though impossible to form a correct estimate of the operation from one case, I would be inclined to give a decided preference to this plan over that of lithotomy.

The patient, from beginning to end, could never be said to be in danger, as any hemorrhage that might have taken place during the operation could have been easily controlled. The presence of the dilator effectually prevents any oozing, as well as the injurious contact of the urine with the raw wound. There was no chance of shock, no risk from peritonitis, infiltration of urine, inflammation of the veins of the neck of the bladder, nor any of the grave sequelæ that too often supervene on the operation of lithotomy. The only unfavourable circumstances that occurred during the progress of the case, were the formation of a trifling abscess, as previously mentioned, and the existence for a few weeks of a small fistula, which would barely admit a crow quill. The former would probably never have occurred, had not the pressure, as recommended, been uninterruptedly continued; and the latter, which healed up soon on his taking exercise and gaining strength, is of too frequent occurrence after lithotomy, to deserve more than a passing notice.

Difficulties, which have been already stated, may occur, viz. great irritability or rigidity of the prostate. In such cases no time has been lost, if the preliminary incisions for lithotomy have been resorted to, and the prostate may be at once partially divided, and the stone removed. But is this step advisable, or even justifiable where the dilator can be employed? I should say not. The loss of a few hours, for the purpose of dilating, is, of course, of no moment, if the danger to the patient is lessened, or even removed and whatever be the size of the stone, if the distention has been complete, it will be perfectly accessible to the most efficient crushing instruments, and its perfect and immediate removal rendered a matter of certainty.

This conclusion, which Dr Willis anticipated, is fully warranted by, and could have been realized in the preceding case; and his able advocacy of this operation, with his bold and judicious estimate of its merits, as compared with lithotomy and lithotrity, entitle him to the highest esteem of his professional brethren, and to the warmest gratitude of every sufferer whom the operation may relieve.

Carlisle, November 1842.

